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VIRGINIA:

IN THE CIRCUIT COURT FOR THE CITY OF RICHMOND

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PHILIP MORRIS COMPANIES, INC., et al.,

Plaintiffs,

-against-

At Law No. 760CL94X 00816-00

AMERICAN BROADCASTING COMPANIES, INC., et al.,

Defendants.

----------x

July 13, 1995
10:07 a.m.

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Continued Videotaped Deposition of DONALD KNUDSON, taken by Defendants, pursuant to Subpoena, at the offices of McGuire Woods Battle & Boothe, Esqs., 901 East Carey Street, Richmond, Virginia before Lee A. Bursten, a Registered Professional Reporter and Notary Public within and for the Commonwealth of Virginia.

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-and-
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ALSO PRESENT:

SHELLEY SANDERS, Videographer

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ERRATA SHEET

Corrections or changes to the deposition testimony of:

Donald Knudson - Volume 2

Page	Line	Correction
200	21	"touched on . . ." (change "this morning" to - yesterday) ". . . dealing with . . ."
201	20	"from page . . . (change "12" to - 123) ". . . of yesterdays . . ."
204	13	change "demitration process" to - RL process"
207	15	Insert "Have you heard" before "Are you aware"
216	8	"the positions" to - the positioning
225	13	strike "Alex, . . ." and insert "I think -- would . . ."
238	16-20	Mr. Rogers' statement ends @ ". . . other than --), Mr. Murphy interrupts w/ ". . . for the period he was in the purchasing department." (Mr. Rogers picks up w/the remainder of the statement beginning w/"We can limit . . ." until ",. . ., but . . ." change "we can ask" to "then I'll simply ask . . ."
248	24	Change "you" to "do"
252	5	Change "what" to "who"
264	3	insert "two" between ". . . the . . ." and ". . . numbers . . ."
270	24	change "FFKSMSFP" to "FFKSMFSP"
274	3	"he won't ask you" (add "to do")
278	12	change "that" to "this"
281	9	"nor I could recall, . . ." add "at the moment,"
282	10	change "correct" to "corrected"
290	5	change "specification" to "specific"
311	22	change "whose" to "was"
327	23	change "203878610" to "2030878610"
328	15	change "against" to "begins"
329	16	change "in" to "by"
333	15	strike "need to"
338	20	Change "recall" to "remember"

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Donald Knudson

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ERRATA SHEET

Corrections or changes to the deposition testimony of:

Donald Knudson - Volume 2

Page	Line	Correction
341	23	"to process it . . ." (add "through receiving")
346	17	"Mr. D. M." change to "Mr. D. B."
347	3	Add "I'll read the first two paragraphs and then ask you a question:" (before the following Q - "Project ART . . .)

Linda C. Thornton
Notary Public
City of Richmond
March 5, 1996
Comm. Exp 2/28/97

Donald Knudson

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THE VIDEO OPERATOR: Good morning. This is videotape number 4, the continuation of the deposition of Mr. Knudson. The time on the screen -- today is July 13th, 1995. The time on the screen is 10:07:01. You're on the record.

D O N A L D K N U D S O N,

resumed, having been previously duly sworn, was examined and testified further as follows:

CONTINUED EXAMINATION

BY MR. ROGERS:

Q. Good morning, Mr. Knudson.

A. Good morning.

Q. Between the time that we broke yesterday afternoon and this morning, did you review any documents in preparation for today's testimony?

A. No, I did not.

Q. I want to pick up on a subject we touched on ~~this morning~~ yesterday dealing with the issue of contemplating adding DAP to RL and your work in the early 1980s to achieve what you testified to be subjective parity between RL and BL.

Do you recall that testimony?

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MR. MURPHY: I object to the form of the question and the summary of the testimony, which speaks for itself. The witness can answer the question.

A. Whether I recall the exact details of what I said, I can't necessarily recall, but the essence of that answer or those answers related to that topic I do recall.

Q. Fine. I'm not going to ask you about your specific testimony. I have a follow-up question. I was merely introducing the subject matter.

A. Surely.

Q. I had asked you at one point whether -- we were talking, as I said, about the objective of reaching subjective parity between the RL and the BL.

And I asked you, and I'll read you my question from page ~~12~~ 123 of yesterday's testimony, "Do you know whether that objective was ever achieved?" And your answer, and I'll quote, "During the time that I was there, I don't believe we've ever felt that we were 100 percent successful in that venture."

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My question is, putting aside the time that you were there, since that time, do you know whether Philip Morris has been successful in achieving subjective parity between RL and BL?

A. Since my departure from R&D, I'm not aware of what additional work may have transpired in that area, and as a result have no awareness of anything that may have occurred there.

Q. We were also talking yesterday about documents describing pH level and nicotine delivery. I want to ask a new question. Do you know whether an increase in the pH of tobacco smoke increases the absorption rate of nicotine through the mucous membrane of the mouth?

A. I don't have any knowledge in that area.

Q. Are you familiar with any research that Philip Morris has done on that issue?

A. No, I'm not.

Q. Do you know what RL supersheet is?

A. No, I don't have any recollection of that terminology.

Q. Have you ever heard that terminology?

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A. I don't recall.

Q. Yesterday you mentioned in describing your knowledge of the RL process the stage in the process where nitrates are removed. I want to ask you a few questions about that stage.

I'm going to hand you what's been marked previously as Knudson Exhibit 1, which is the Philip Morris Incorporated's answers to American Broadcasting Companies' first set of interrogatories. And as we've discussed yesterday, that exhibit includes as well an addendum entitled "Tobacco processing and cigarette manufacturing at Philip Morris."

Would you please turn to page 13 of that addendum.

(Witness complies.)

Q. You'll see a section entitled "Denitration." And I'll just read you that first paragraph. Answer entitled letter E, "Denitration."

"Next, potassium nitrate (KNO3) is removed from the water solubles. The KNO3 is present in the raw tobacco that Philip Morris U.S.A. buys at auction. Its presence in the

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10:11:54 tobacco is the result of the application of
10:11:56 fertilizer by tobacco growers.
10:11:58 "The KNO3 in tobacco produces
10:12:04 nitrogen oxides (NOX) when the tobacco is
10:12:06 smoked. Accordingly KNO3 is removed in the
10:12:10 reconstitution process in order to reduce the NOX
10:12:12 content of cigarette smoke of the finished
10:12:14 cigarettes."
10:12:20 What's your understanding of the
10:12:24 reason why Philip Morris removes potassium
10:12:28 nitrate from the water solubles in the
12:28 ~~denitration process~~ RL Process?
10:12:30 MR. MURPHY: Objection to lack of
10:12:32 foundation. The witness can answer the
10:12:34 question.
10:12:38 A. My general understanding, and it's
10:12:40 probably more accurately described as my
10:12:48 assumption based on things that I have heard, was
10:12:54 that there was a point in time, and I can't be
10:12:56 specific about when that occurred, but sometime
10:13:00 during the duration of my employment with the
10:13:04 company, when a comparative index was published
10:13:12 in Germany which compared the -- and I'm not sure
13:14 here whether it compared the nitrate levels or

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the NOX levels in delivery of cigarettes.

It is likewise my recollection that some Philip Morris products were not within the middle of that ranking, but tended to be on the high side of that ranking, and that that was a basis for a decision to pursue the possibility and apparently the subsequent decision to remove nitrates.

That is all an assumption on my part based on bits and pieces of things that I heard.

Q. Was there a name or title of the comparative index to which you're referring that was published in Germany?

A. I believe that the name of that index was the Hirshfield index. But I'm not -- I don't have any certainty about that name.

Q. Turning back to the exhibit before you, the final sentence says that "the KNO3 and tobacco produces nitrogen oxides when the tobacco is smoked. Accordingly, KNO3 is removed."

Are there health consequences to the smoker from ingesting nitrogen oxides?

A. I don't have any knowledge of that.

Q. Do you know whether the Hirshfield

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10:15:08 index in any way discussed the issue of the
10:15:12 health consequences of ingesting nitrogen
10:15:12 oxides?
10:15:14 MR. MURPHY: Objection to form. The
10:15:14 witness can answer.
10:15:20 A. I don't have any direct knowledge of
10:15:22 the index, the document, anything. I don't know
10:15:26 that I've ever seen anything. So I don't have
10:15:28 any awareness that there's any implication of
10:15:36 what the significance of either NOX or nitrates
10:15:38 or however it was expressed within that index
15:40 is.
10:15:42 Q. And putting aside the index, do you
10:15:44 have any knowledge as to the health consequences
10:15:48 of ingesting nitrogen oxides when tobacco is
10:15:50 smoked?
10:15:50 MR. MURPHY: Objection. Asked and
10:15:52 answered. Let's move on.
10:15:54 MR. ROGERS: I'm not sure he has
10:15:56 answered that question, David.
10:16:04 MR. MURPHY: "Are there health
10:16:06 consequences to the smoker from ingesting
10:16:10 nitrogen oxides? Answer: I don't have any
16:14 knowledge of that." I think that's asked and

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answered. I think you can move on.

MR. ROGERS: I'll accept that.

Q. Do you know whether potassium nitrate is removed in the BL process?

A. I have some awareness that at some point in time during my tenure with Philip Morris, that that capability was explored. I'm not 100 percent sure whether it was ever implemented or not.

Q. Do you know whether potassium nitrate is removed during any other process in the manufacture of cigarettes at Philip Morris?

A. I don't have any awareness of that.

Q. Have you heard Are you aware of any discussions within Philip Morris about the expense from a financial standpoint of removing potassium nitrate in the RL process?

MR. MURPHY: Objection to the form of the question. Are you asking him whether different forms of nitrate removal have different costs associated with them? Or are you asking him a more general question?

MR. ROGERS: I'm asking a more general question, not about different forms, but

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10:17:38 simply the process of removing potassium nitrate
10:17:40 and the financial implications of that stage in
10:17:42 the RL process.
10:17:42 MR. MURPHY: Do you understand his
10:17:44 question?
10:17:46 A. Could you repeat the question?
10:17:46 Q. Sure. Are you aware of any
10:17:48 discussions at Philip Morris about the expense
10:17:52 from a financial standpoint of removing potassium
10:17:54 nitrate in the RL process?
10:17:56 MR. MURPHY: Objection to form. You
17:58 can answer the question.
10:18:06 A. I guess my difficulty in answering
10:18:14 the question is, as an engineer, it is impossible
10:18:16 for me to separate a basic engineering
10:18:20 understanding that says if you add an additional
10:18:24 process, or additional process step, the
10:18:28 likelihood is that there is a cost associated
10:18:30 with that.
10:18:32 I do not recall any specific
10:18:34 discussions of the cost associated with that
10:18:36 processing step.
10:18:38 Q. Do you know what stage in the RL
18:42 process the potassium nitrate is removed?

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10:18:48 A. No, I do not. To clarify that question, it is my understanding that that occurs somewhere in the process after the solubles are separated from the fiber or cellulosic materials. Beyond that, I'm not sure where that occurs.

10:19:08 MR. MURPHY: Mr. Knudson, you said "to clarify that question." Did you mean to clarify your answer to that question?

10:19:14 THE WITNESS: To clarify my answer, yes.

19:16 Q. I asked you yesterday whether you knew what DNCEL was. And I recall your testimony to be that it was denitrated concentrated extract liquor.

10:19:26 A. That's correct.

10:19:30 Q. Would it refresh your recollection if I asked you whether the potassium nitrate was removed before the liquor is applied to what you've described as the base web?

10:19:46 MR. MURPHY: Objection to form. You can answer.

10:19:56 A. I think that the essence of your question, I believe, probably goes back to my

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10:20:08 original answer and subsequent clarification,
10:20:10 that again, as an engineer I make certain
10:20:14 assumptions of the knowledge of the audience that
10:20:14 I'm talking about.
10:20:16 If I go back to my original
10:20:18 clarification, the full clarification of that
10:20:22 should have been that the denitration step occurs
10:20:26 at some point after the solubles are separated
10:20:32 from the fiber or cellulosic material and prior
10:20:36 to the recombination of those solubles, and in
10:20:40 fact prior to the mixing of those solubles with
:20:40 the flavor system.
10:20:42 So I can narrow it down to that
10:20:50 extent. My apologies for not being able to draw
10:20:52 that picture more clearly initially.
10:21:08 Q. Is the potassium nitrate part of the
10:21:14 solubles that are separated from the fiber or
10:21:16 cellulosic material?
10:21:24 A. In order for them to be in the liquor
10:21:28 stream that I described from which they're
10:21:34 removed, they must be existent in that stream,
10:21:36 and therefore would be part of the tobacco
10:21:36 solubles.
:21:42 Q. From your knowledge of the RL

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process, is it feasible to remove any other constituent of the solubles at this stage in the process that the potassium nitrate is removed?

MR. MURPHY: Objection to form. You can answer.

A. I don't have enough of either a detailed knowledge of the RL process or what processing techniques would be required, or even awareness of all the compounds that might exist or components that might exist, to be able to answer that question.

Q. Let's take the compounds that you identified yesterday as constituents in the solubles. You mentioned sugars. Could you at the stage in the process in which the solubles are separated from the fiber, remove sugars from the solubles?

MR. MURPHY: Objection. Asked and answered. I'll let the witness answer the question again.

A. Again, my understanding of the process is of such a general nature, and my understanding of what processes might be required to remove sugar are such that I don't believe I

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10:23:14 can answer that question.

10:23:28 Q. Could you at this stage of the

10:23:30 process in which the solubles are separated from

10:23:34 the fiber remove nicotine from the solubles?

10:23:36 MR. MURPHY: Objection to form. I

10:23:36 don't think you meant to be unclear with your

10:23:38 question. Are you talking about at the stage

10:23:42 where the solubles are separated from the fiber,

10:23:42 or later in the process?

10:23:44 MR. ROGERS: I appreciate that

10:23:44 clarification.

10:23:46 Q. Once the solubles are separated from

10:23:50 the fiber, could you before the solubles are

10:23:52 applied to the fiber at the later stage remove

10:23:54 nicotine from the solubles?

10:23:56 MR. MURPHY: Objection. Asked and

10:23:58 answered. You can answer the question again.

10:24:04 A. Again, I'm in the same quandary. My

10:24:10 awareness of the process being very general, and

10:24:12 my awareness of any process that might be

10:24:18 appropriate to accomplish that, is such that I

10:24:20 can't answer the question. I simply do not

10:24:20 know.

10:24:26 Q. Putting aside the mechanics of the RL

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process, can you remove nicotine from a liquid solution and leave all the other components of that liquid solution in the solution?

A. I don't have any awareness of how to do that.

Q. How did you remove the nicotine in the ART process, the alkaloid reduced tobacco process, to which you referred yesterday?

A. The ART process was based on using supercritical C02 at a given set of conditions, and essentially circulating that C02 through a bed of tobacco, said tobacco being extracted by the C02 with a subsequent loss of nicotine and other tobacco-related compounds or tobacco present compounds.

Q. Do you recall specific names of those other tobacco-related compounds or tobacco present compounds?

A. No, I do not.

Q. Could you apply the process that you've just described involving supercritical C02 to remove nicotine from a liquid solution?

MR. MURPHY: Objection. Are you asking him as just a general matter of

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engineering knowledge?

MR. ROGERS: Yes. Based on his knowledge of engineering.

A. Speaking as an engineer, I don't have enough understanding of the full possibilities of supercritical extraction to be able to answer that question.

Q. Are you aware of any tests that Philip Morris has conducted to use the supercritical extraction process to remove nicotine from a liquid solution as opposed to the dried tobacco that you described in the ART process?

A. Could you repeat the question for me, please?

Q. Sure. Are you aware of any tests that Philip Morris has conducted to use the supercritical extraction process to remove nicotine from a liquid solution as opposed to the dried tobacco that you described in the ART process?

A. I don't have any recollection of that.

Q. You mentioned a moment ago about the

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10:27:46 Hirshfield index. And I believe your testimony
10:27:48 was that certain Philip Morris products were at
10:27:56 the high end of that index. What was it about
10:28:00 Philip Morris's position -- strike that.
10:28:04 What was it about those products, and
10:28:06 I'm referring now to the products that were at
10:28:10 the high end of the index, that prompted Philip
10:28:14 Morris to remove potassium nitrate?
10:28:16 MR. MURPHY: Objection. Misstates
10:28:18 prior testimony. The testimony speaks for
10:28:22 itself. If the witness understands the question,
28:22 he may answer it.
10:28:32 A. I'm afraid I need to ask you to
10:28:32 repeat the question.
10:28:32 Q. Sure. You mentioned a moment ago
10:28:34 about the Hirshfield index. I believe your
10:28:36 testimony was that certain Philip Morris products
10:28:42 were at the high end of that index. And then
10:28:44 you -- I'm sorry. And my question was, what was
10:28:48 it about those Philip Morris products at the high
10:28:50 end of the index that prompted Philip Morris to
10:28:52 remove potassium nitrate?
10:28:56 MR. MURPHY: Objection to form. Same
28:58 objection as to misstatement of prior testimony.

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10:28:58 The witness may answer.

10:29:04 A. Just to be perfectly clear, so as not to be unclear about anything, first of all, I 10:29:10 believe that I said that I believed the name of 10:29:16 the index was the Hirshfeld index or Hirshfield 10:29:20 index, and I'm sure of that. 10:29:22

10:29:26 There was some index. The positioning ~~The positions~~ 10:29:36 of some Philip Morris products was other than in 10:29:40 the middle range of that index. I'm not sure how 10:29:42 I expressed them as with respect to your 10:29:46 statement of "in the high end of the index."

29:54 But beyond those two clarifications, 10:29:58 I'm not sure I have any awareness of anything 10:30:02 else that would allow me to answer the question. 10:30:20 If you'd like to repeat the question, my having 10:30:22 gotten those two issues out of the way, I would 10:30:24 be willing to listen to the question again.

10:30:36 Q. Do you recall which Philip Morris 10:30:40 products were in positions on the index other 10:30:42 than in what you've described as the, quote, 10:30:46 middle range, unquote?

10:30:48 MR. MURPHY: I think the quote was -- 10:30:50 I'm sorry, I apologize. He used both the term 30:54 "middle range" and "middle of that ranking" in

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10:30:56 the prior answer. I'm looking back at the prior
10:30:56 answer.
10:30:56 You can answer the question.
10:30:58 A. I never, to the best of my knowledge,
10:31:04 I never saw the index. And I have no
10:31:08 recollection of what products were positioned
10:31:10 where in the index.
10:31:16 Q. Do you know who at Philip Morris was
10:31:18 responsible for reviewing the index and
10:31:20 considering whether to remove potassium nitrate?
10:31:24 A. No, I do not recall.
:31:30 Q. Do you recall whether that would be a
10:31:32 research and development function?
10:31:36 MR. MURPHY: Objection. Asked and
10:31:40 answered. I think he has answered this question
10:31:42 implicitly. I will let him answer it
10:31:44 explicitly.
10:31:54 A. My recollection would be that at
10:31:58 least from discussion point of view, those are
10:32:02 the kinds of discussions that might occur in an
10:32:04 R&D environment as opposed to a manufacturing
10:32:06 environment.
10:32:14 Q. We talked yesterday about a few
:32:16 individuals. In particular I'm thinking of

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Howard Spielberg. And you were describing your tenure at Philip Morris, and Steve Darrah's.

Is it accurate to describe the careers of those three individuals at Philip Morris as moving between the research and development function and the manufacturing function of Philip Morris?

MR. MURPHY: Objection to form. I think the question is argumentative. You can answer the question.

A. To make sure I have it clear, the three individuals we're talking about, that was Howard Spielberg, Steve Darrah, and myself?

Q. Correct.

A. To the best of my recollection, Howard always worked within the R&D environment. I'm not aware of any time when he wasn't in the R&D environment. To the best of my recollection, Steve Darrah always worked within what we would call the manufacturing environment.

So that I would be the only one of the three who in fact made a transition from a manufacturing environment, where I'm including roles such as engineering and purchasing as being

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on the manufacturing side of the house, into an R&D environment, and then subsequently back out into a manufacturing environment.

Q. Do you know of any other Philip Morris employees who have similarly held jobs both in manufacturing and in research and development?

MR. MURPHY: Time frame?

MR. ROGERS: I'm comfortable using March 24, 1994 as the cutoff.

MR. MURPHY: Your question is whether as of March 24, 1994, this witness has a recollection of anyone who had ever worked at any time in his or her career in R&D and on an operational side of the company?

MR. ROGERS: Up to March 24, 1994.

MR. MURPHY: I think the question is extremely broad. But the witness can answer the question.

A. Certainly I have recollections of people who either transitioned from R&D into manufacturing or from manufacturing into R&D, or made several moves in between.

To take that recollection and put it

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forward into a series of names, I could do so, but I can assure you that if you give me ten minutes to do it, I'll come up with some number of names, and if you give me 20, I'll probably come up with a few more. There will be some point where I reach an end point.

But there are a number of people, to my recollection, who have, for whatever reason, moved between the manufacturing and the R&D organizations.

Q. I was simply asking you whether that's a common occurrence, to move between the two departments, not for the specific names.

MR. MURPHY: I object to the form of the question. I don't know what you mean by "a common occurrence." The witness's answer speaks for itself. The witness can answer the question nevertheless.

A. I'm in the same quandary as to what "common" means. If you were to compare it to some other type of movement, and we were to have data in front of us in which we could compare the frequency of one type of movement versus another, then one could characterize that one was more

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frequent than the other, I still wouldn't know how to define "common."

(Knudson Exhibit 12 for identification, memo from D. L. Westra to J. M. Whitman, dated August 21, 1991.)

Q. Mr. Knudson, you've just been handed what's been marked as Knudson Exhibit 12, which is a two-page document, a memo from D. L. Westra to J. M. Whitman, dated August 21, 1991. Subject matter, financial impact of denitration.

The Bates stamp range is PA 128946 to PA 128947. The corresponding Philip Morris production numbers are 2025325449 to 2025325450.

Have you ever seen this document before?

A. I don't have any recollection of having seen this before.

Q. I'll read the first paragraph and then ask you a question about it. "Based on changing consumer needs and regulatory requirements, the need to denitrate RL products may be eliminated. This would present manpower savings and financial savings opportunities to Park 500. These savings are calculated to total

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$2.5 million annually."

Do you recall in this time frame, August 1991, any changing consumer needs or regulatory requirements to which the author of this memo is referring?

MR. MURPHY: Objection to form. You can answer the question.

A. I don't have any recollection.

Q. Who is D. L. Westra?

A. I believe that's Dan Westra.

Q. Do you know what his position was in August of 1991?

A. No, I don't recall.

Q. I take it J. M. Whitman is John Whitman, to whom you referred yesterday; is that correct?

A. Yes, I believe that's correct.

Q. And in August of 1991, do you know what his position was at Philip Morris?

A. My quandary is that as people move from job to job, being able to pin down the exact times, it's tough enough to keep up with when I move, much less somebody else.

The probability was that John was in

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the same position that he was in when I left Bermuda Hundred earlier in 1991, which would make him the plant manager of the Park 500 facility.

Q. If you'll turn down to the names on the bottom of the page, on the first page, the third name, G. L. McConnell, do you know who that is?

A. I believe that's Gordon McConnell.

Q. And in this time frame of August of 1991, do you know what his position was at Philip Morris?

A. No, I'm not sure what his exact position was.

Q. Have you ever worked in the same department as Mr. McConnell?

A. No, I have not. Again, before I -- to clarify that answer, I guess we get into a definition of what's the same department.

Obviously there was a point in time when he and I were both within the manufacturing organization. There was a period of time that he and I were both working in the area of what we would reference as the processing plants, that is, plants that do not produce finished

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10:41:04 cigarettes. So if that's the kind of, quote, department that you mean.

10:41:06 The department that I typically think of and was using when I responded to that question would have been that within the Park 500 environment, the facility is presumably divided into departments. Under that assumption the answer would in fact be no.

10:41:18 Q. Do you recall working on any specific projects with Mr. McConnell?

10:41:28 A. I don't have any recollection of that.

10:41:30 Q. I want to return to an additional issue we touched on yesterday with respect to the RL process, and the application of solubles to what you described as sheet. And I'll simply read you my question and your answer and then ask a follow-up question.

10:42:02 MR. MURPHY: Alex, do you have a citation to his prior testimony?

10:42:22 MR. ROGERS: Yes. I'm going to begin on page 111 and continue on to page 112.

10:42:26 Q. We were referring at that time to Knudson Exhibit 4, which was handwritten notes.

10:42:40

10:42:44

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10:42:46 And I asked you the following question.

10:42:50 "On the very first page of this

10:42:52 exhibit, there's a series of bullet points. I

10:42:54 want to ask you about the second to last bullet

10:42:58 point, and it's in quotation marks, and I'll

10:43:00 simply read it. 'We are not putting the amount

10:43:04 of solubles on the sheet we think we are

10:43:06 (refractive index).'"

10:43:08 My question was, "Have you ever heard

10:43:14 concern about the amount of solubles being placed

10:43:14 on the sheet at Park 500?" Answer --

43:16 MR. MURPHY: ~~Alex,~~ I think Alex would you object

10:43:18 if I showed the witness the answer in the

10:43:18 transcript?

10:43:18 MR. ROGERS: Not at all.

10:43:24 Q. "Answer: I think the only thing that

10:43:26 I can say is that I'm aware that discussions

10:43:30 about the soluble levels as applied to sheet are

10:43:34 of interest, were of interest in areas I was

10:43:36 involved in from the standpoint that the sheet is

10:43:40 capable of carrying only a certain degree of or a

10:43:42 certain level of solubles, since at the point in

10:43:44 time that those solubles are recombined with the

43:48 base web, they have had the addition of flavor

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systems.

"Then the nature and design of a flavor system combined with the solubles has to be considered with respect to the ability to reapply those solubles to the sheet. I think that pretty well summarizes my understanding of solubles with reference to base web."

My question is, have you ever heard concern that there weren't enough solubles being placed on the sheet at Park 500?

MR. MURPHY: I object to the form of the question. You can answer the question.

A. I don't believe I have any recollection of any comment to that effect.

Q. Do you understand my question?

A. I believe you're asking if I've ever heard anyone say anything to the effect that we're not applying sufficient solubles.

Q. In describing the four groups of the quality and specifications area for which you're now the director, the third group you mentioned had multiple components. I'm going to ask you about the component that had jurisdiction over what you described as vendors and suppliers. And

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I believe you identified the section leader as Barbara Carter.

What exactly occurs in this aspect of the quality and specifications group for which you're the director?

MR. MURPHY: Time frame?

MR. ROGERS: Up to March 24, 1994.

MR. MURPHY: Thank you.

A. The functionality of that group is to work in support of the purchasing organization in assessing the performance of our direct material suppliers with respect to the quality of the products that they provide to us, their ability to meet whatever direct material specifications are existent.

It also entails review of the quality capabilities and quality plans of our suppliers. The principal focus of that activity has been in the area of our paper and board suppliers, and the subsequent converters of that paper and board to printed packaging or printed tipping paper and the like.

Q. The first description you gave, to assess the performance of direct material

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suppliers, what do you mean by "assess the performance" of those suppliers?

A. They are the group, the group that works for Barbara is the group that is charged with compiling the information that comes in from the direct material receiving areas in the cigarette factories, and again, the focus is around the cigarette factories and the finished products.

So that, for instance, the performance of a printer or converter of flip top blanks, who might supply flip top blanks to Richmond, which has a combined receiving organization, Cabarrus and Louisville, on a quarterly basis, is summarized in terms of the number of quality related occurrences attributable to that vendor.

And that summary information is then part of the information that's available to the purchasing department in terms of their long term purchasing or buying plan.

Q. What are flip top blanks, if I have that right?

A. Mm-hmm. Flip top blanks are the term

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that we use to describe the printed board material which has been printed and scored and whatever cutouts need to have been made to it so on a packer it forms up and becomes the box that we refer to as the flip top box.

Q. In this group that we're talking about for which Barbara Carter is the section leader, is there any testing of the products that are supplied by outside vendors?

A. No. The data they are relying on comes from testing carried out by other groups.

Q. This entity then for which Barbara Carter is the section leader does no testing of the supplies provided by outside vendors?

A. That's correct.

Q. Who tests the flavors that are sold to Philip Morris by outside vendors?

MR. MURPHY: Objection to form. You can answer.

A. To the extent that any testing is done, I think it depends upon the nature of the flavor and how broadly you're characterizing the term "flavor."

Q. What do you understand the term

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10:51:02 "flavor" to mean?

10:51:08 A. In some of the Philip Morris

10:51:16 documentation, there are materials which are

10:51:22 listed as flavors as opposed to those things that

10:51:24 are listed as casings.

10:51:30 Q. What's the difference between a

10:51:32 flavor and a casing?

10:51:38 MR. MURPHY: As used in Philip

10:51:38 Morris --

10:51:42 MR. ROGERS: Yes.

10:51:42 MR. MURPHY: -- terminology?

:51:44 A. I'm not sure I really understand the

10:51:50 distinction between those two terminologies.

10:52:00 Q. Does Philip Morris purchase casings

10:52:02 from outside vendors?

10:52:04 A. Yes, they do.

10:52:06 Q. And what role do the casings play in

10:52:08 the manufacture of cigarettes?

10:52:14 A. I'm not sure that I am familiar with

10:52:20 the role of -- or able to accurately identify the

10:52:26 full range of casing used. So to answer to that

10:52:28 general question would be to only give you a

10:52:30 partial answer.

:52:32 Q. Do you know at what stage or stages

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10:52:36 of the manufacturing process casings are used?

10:52:42 MR. MURPHY: It might help, Alex, if

10:52:44 you asked him first if he understands what a

10:52:46 casing is. I don't think you've actually asked

10:52:48 that question.

10:52:50 MR. ROGERS: Let's begin with your

10:52:52 question, David. Thank you.

10:52:56 Q. Do you know what a casing is?

10:53:02 A. What I know is that there are certain

10:53:08 application points in a primary where -- the

10:53:14 reference that I'm familiar with refers to that

:53:20 which is being applied as being a bright casing

10:53:34 or a burley casing within primary. That's not to

10:53:38 say that those things may not be used elsewhere

10:53:40 in the process and referred to differently.

10:53:46 Q. When you say "within primary," could

10:53:46 you explain what you mean by that?

10:53:52 A. Primary being -- excuse me. Is the

10:53:54 question what's a primary?

10:53:54 Q. Yes.

10:54:00 A. Primary is that facility that is

10:54:04 typically located in close proximity to a

10:54:10 cigarette making and packing activity. In the

:54:16 case of the four facilities in U.S.A., they are

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10:54:20 essentially on the same site and adjoining or
10:54:24 connected in some way.
10:54:26 The primary takes all of the
10:54:32 components that go together to make a final cut
10:54:34 filler and prepares that final cut filler for
10:54:42 delivery to -- for eventual delivery to the make
10:54:44 pack equipment.
10:54:46 Q. Do you know whether casings are used
10:54:46 in the RL process?
10:54:56 A. I believe that in yesterday's
10:55:04 testimony, that you introduced some documentation
:55:08 which refreshed my memory around a particular
10:55:14 casing, or at least that which I would tend to
10:55:20 think of as a casing, glycerine. And so based on
10:55:22 that as well as my other recollection, the answer
10:55:24 would be yes.
10:55:32 Q. Is Park 500 part of what you would
10:55:34 consider primary?
10:55:36 A. No.
10:55:44 Q. So then casings are used both in
10:55:46 primary and in Park 500, as you understand it?
10:55:50 A. I believe I indicated that casings
10:55:56 are used in primary and perhaps in other
:55:56 locations.

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Q. As of March 24, 1994, who at Philip Morris was in charge of purchasing flavors from outside vendors?

MR. MURPHY: Objection. Are you limiting your question to flavors as opposed to casings, or are you asking a more general question?

MR. ROGERS: I'm limiting it just to flavors.

MR. MURPHY: I just want to be clear, because we're switching back and forth.

A. Are you asking for the name of an individual or an organization?

Q. Thank you for that clarification. I'll ask for both. Let's begin with the organization.

A. To the best of my knowledge, the responsibility for purchasing flavors lies within the purchasing organization.

Q. And as of March 24, 1994, do you know who the person in charge of purchasing flavors in the purchasing organization was?

A. I don't have any recollection of that.

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10:57:16 Q. Prior to March 24, 1994, do you know anyone who has held the position in the purchasing organization in charge of purchasing flavors from outside vendors?

10:57:34 A. To the best of my recollection, the only name that I can recall of somebody within the purchasing organization that I can say with any assurance was responsible for purchasing flavors, and again, to my recollection, it wasn't necessarily all flavors, but only some flavors, was a gentleman by the name of Bill Heath.

:58:10 And that time frame would have been back in the early '80s when I was in the purchasing organization.

10:58:22 Q. Your testimony was that it wasn't necessarily all flavors, but only some flavors. Is there some division according to the nature of the flavor within the purchasing organization in terms of the responsibility for purchasing?

10:58:38 A. I'm not aware of that, as to whether there is or is not. I know that there are some -- that there are a number of people in that organization, and my reference was simply to make clear that what I wasn't trying to represent was

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that this person was the sole person responsible for that purchasing function.

Q. Can you recall any of the specific flavors that Bill Heath was responsible for purchasing?

A. No, I do not recall that.

Q. Prior to March 24, 1994, do you know whether Philip Morris has purchased any flavors from outside vendors that contain nicotine?

A. I don't have any awareness of that.

Q. Prior to March 24, 1994, do you know whether Philip Morris has purchased any casings from outside vendors that contain nicotine?

A. I don't have any awareness of that.

Q. Prior to March 24, 1994, do you know whether Philip Morris has used any flavors that contain nicotine in any of its products sold in the United States?

A. If the question you're asking me is do I have an awareness that we have used ethanol as a solvent, as a solvent carrier for flavors, and that that ethanol is denatured with, as I understand it, nicotine sulfate, then yes, I have that awareness.

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11:00:44 Q. Other than the ethanol that's used as a solvent carrier for flavors, do you know 11:00:50 whether prior to March 24, 1994, Philip Morris 11:00:52 used any flavors that contain nicotine in any of 11:00:58 its products sold in the United States? 11:01:00 A. No, I don't have any awareness of 11:01:02 that. 11:01:02 Q. Is ethanol used as a solvent carrier 11:01:16 for casings? 11:01:16 A. Not to my knowledge. 11:01:18 Q. Do you know the names of any flavor 11:01:34 suppliers for Philip Morris? :01:36 MR. MURPHY: As of when? 11:01:38 MR. ROGERS: Let's use the March 24, 11:01:42 1994 date. 11:01:42 A. I have a -- I have some recollection 11:01:52 from either my time in the purchasing 11:01:56 organization or subsequent to that of the names 11:02:02 of some companies that I believe that we did 11:02:08 business with, who would be considered flavor 11:02:12 suppliers. 11:02:14 Q. I'm sorry. I hadn't recalled that 11:02:20 you had spent time in the purchasing 11:02:22 organization. What were the dates, :02:24

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11:02:28 approximately, that you worked in the purchasing organization?

11:02:32 A. From a point sometime in 1980, I

11:02:40 believe, until the early part of 1982, I was in

11:02:46 the purchasing planning function, which was an

11:02:48 entity within the purchasing organization.

11:02:50 Q. And turning to the names of the

11:02:56 suppliers which you recall from that period of

11:02:58 time in the purchasing organization, what are the

11:03:00 names of those suppliers?

11:03:04 A. One that comes to mind would be

:03:20 Harmonn & Riemer. Beyond that the memory is a

11:03:22 little bit clouded in that what I may give you

11:03:26 may be less than a complete or most accurate name

11:03:46 for a company. But McAndrews & Forbes, Fritchie,

11:03:56 and I believe C.F. Sauer, which is here in

11:03:56 Richmond.

11:03:58 But that may be a confusion because

11:04:00 they're here in Richmond and I'm aware of having

11:04:02 driven past their location.

11:04:08 Q. Do you know whether Philip Morris has

11:04:10 purchased any flavors from International Flavors

11:04:12 and Fragrances Company?

:04:12 MR. MURPHY: At any time?

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MR. ROGERS: Prior to March 24, 1994.

A. I don't know whether they have or not. The name rings a bell. But I can't say for sure that we've purchased flavors from them or not. I simply have no recollection.

Q. Based upon your experience in the purchasing organization and at Philip Morris in general, would you recognize a Philip Morris purchasing order if you saw one?

MR. MURPHY: I object to the form of the question. Philip Morris's purchasing order forms may have changed over time. Again, do you have a specific time period in mind?

MR. ROGERS: I don't have a specific time period other than/for the period he was in the purchasing department. / We can limit it to that for this question, but ~~we can ask~~ a second question after that.

MR. MURPHY: MR. ROGERS: then I'll simply ask

A. I don't know whether I would or not. I had no occasion or no reason in my time in the purchasing organization to be involved with the direct placement of orders. There are also purchasing activities that occur that have

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11:05:32 nothing to do with, if you will, direct
11:05:36 materials, but would include purchase orders for
11:05:42 equipment, operating supplies, pens and pencils,
11:05:42 et cetera, et cetera.
11:05:44 There are probably some forms that I
11:05:50 would recognize from having seen them, or what I
11:05:54 may be recalling may be an internal form which is
11:05:56 used to generate an order for pens or pencils or
11:05:58 whatever.
11:06:22 MR. MURPHY: Alex, would this be a
11:06:24 convenient time to take a short break? I don't
:06:26 want to interrupt.
11:06:26 MR. ROGERS: Let's go on for a few
11:06:28 more minutes.
11:06:28 MR. MURPHY: That's fine.
11:06:32 Q. Do you know who David Williams is at
11:06:34 Philip Morris?
11:06:36 A. I know the name.
11:06:40 Q. Do you know what his position was up
11:06:44 to March 24, 1994?
11:06:46 A. To the best of my recollection, he
11:06:52 works in R&D. I don't recall any details about
11:06:52 his position beyond that.
:07:08 MR. ROGERS: Why don't we take a

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break.

THE VIDEO OPERATOR: We're going off the record. The time on the screen is 11:07:13.

(A recess was taken.)

11:25:58 THE VIDEO OPERATOR: We're back on the record. The time on the screen is 11:26:03.

Q. Mr. Knudson, in your testimony yesterday, and I'll direct you to page 5 of that testimony in which you were describing the responsibilities of the four groups within the quality and specification systems organization --

:26:24 MR. MURPHY: May I put page 5 in front of him?

MR. ROGERS: Please.

Q. The final paragraph on page 5, this is your testimony, "The other part of that group is focused on our vendors or suppliers, and it's to best assess the quality of the performance of those suppliers and to interact with them in conjunction with the purchasing department."

Would you please describe what you mean by "interact with them in conjunction with the purchasing department"?

:26:56 MR. MURPHY: Objection. I think this

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has been asked and answered multiple times. You can answer again.

A. The intention of what I was trying to say here is that the role of that group is to play a joint role with the purchasing organization in terms of assessing certain things about our suppliers and their quality systems, their ability to provide products that meet our specifications and quality standards, as well as to supply the purchasing organization with, if you will, rolled up data from the incoming factory sources as to the performance of those suppliers.

Q. Prior to March 24, 1994, have you had any involvement in the assessment of reconstituted tobacco manufactured by Kimberly-Clark for potential sale to Philip Morris?

MR. MURPHY: Objection to form. You can answer the question.

A. Your question is, have I personally had any involvement in any interactions with Kimberly-Clark with respect to reconstituted tobacco? Is that --

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Q. My question wasn't limited to interactions with Kimberly-Clark, but rather just any involvement in the assessment of reconstituted tobacco manufactured by Kimberly-Clark.

MR. MURPHY: What do you mean by "assessment," Alex?

MR. ROGERS: I mean Philip Morris's contemplation, if any, of purchasing reconstituted tobacco from Kimberly-Clark, in the assessment of the quality of the reconstituted tobacco.

MR. MURPHY: Do you understand the question?

THE WITNESS: I believe so. To the best of my recollection, I've had no involvement in any assessment of the quality of product which might be or was supplied by Kimberly-Clark, that is, reconstituted product.

Q. Have you had any involvement in the assessment of the quality of the product which might be or was supplied by LTR to Philip Morris?

MR. MURPHY: I object to the form of

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11:29:42 the question. You can answer.

11:29:44 A. I don't have any recollection of any

11:29:50 involvement with the assessment of the quality of

11:29:54 the product provided by -- of the reconstituted

11:29:56 product provided by LTR.

11:30:00 Q. Do you know who at Philip Morris has

11:30:02 had involvement with the assessment of the

11:30:04 quality of the product provided by LTR?

11:30:06 MR. MURPHY: Objection. Lack of

11:30:08 foundation. It has not been established that

11:30:12 this witness even recognizes the term LTR or

:30:16 knows what entity it refers to. I think the

11:30:22 question is without proper foundation. I'll let

11:30:24 the witness answer it.

11:30:26 A. Could you repeat the question?

11:30:30 Q. Do you know what LTR is? That's a

11:30:30 different question.

11:30:38 A. Okay. Do I know what LTR is? I

11:30:46 don't recall what the -- what LTR is the acronym

11:30:54 of. I am aware that LTR is a company in France

11:30:56 which produces reconstituted tobacco.

11:31:00 Q. Do you know whether prior to March

11:31:06 24, 1994, Philip Morris ever contemplated

:31:06 purchasing reconstituted tobacco from LTR?

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11:31:08 MR. MURPHY: Objection. Is this a question with reference to a purchase contemplated for use in domestic cigarette product?

11:31:16 MR. ROGERS: I hadn't narrowed my question to that. Are you objecting to my question if it is not so narrowed?

11:31:22 MR. MURPHY: I'm objecting to your question to the extent it inquires into Philip Morris's export brands offered for sale solely outside the United States. I just am trying to clarify what the scope of the question is.

11:31:40 MR. ROGERS: Let me rephrase my question.

11:31:42 Q. Do you know whether prior to March 24, 1994, Philip Morris ever contemplated purchasing reconstituted tobacco from LTR for sale in Philip Morris's cigarettes in the United States?

11:31:56 MR. MURPHY: For sale in?

11:31:58 Q. For use in Philip Morris cigarettes sold in the United States. I apologize.

11:32:04 A. I don't have any recollection of that.

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11:32:08 Q. Do you know whether prior to March 24, 1994, Philip Morris has ever purchased reconstituted tobacco from LTR for use in Philip Morris cigarettes sold in the United States?

11:32:20 MR. MURPHY: Objection. Asked and answered.

11:32:26 Q. My first question was, had it ever contemplated purchasing tobacco. And now my question is, has Philip Morris ever purchased tobacco.

11:32:34 MR. MURPHY: I'll let the witness

:32:36 answer the question.

11:32:38 A. I don't have any awareness of that.

(Knudson Exhibit 13 for identification, memo from Ted Sanders to distribution.)

11:33:54 Q. You've just been handed what's been marked as Knudson Exhibit 13, which is a memo from Ted Sanders to distribution, date, June 1, 1989, subject matter, minutes of the R&D strategic planning committee meeting, April 28th, 1989.

11:34:14 And if you'll turn to the second to

:34:16 last page, you'll see you're listed as having

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11:34:20 received a copy under the category of people
11:34:24 listed in the cc group. The Bates stamps numbers
11:34:32 are PA 835863 to PA 835870, corresponding Philip
11:34:42 Morris numbers are 2022177263 to 2022177270.
11:34:48 June 1, 1989. Were you still part of
11:34:52 the research and development organization at
11:34:52 Philip Morris?
11:34:54 A. Yes, I was.
11:34:58 Q. Do you recall receiving this document
11:35:00 that I've just handed you?
11:35:02 A. No, I don't have any recollection of
:35:02 it.
11:35:06 Q. Do you recall attending a meeting of
11:35:10 the R&D strategic planning committee on April
11:35:12 28th, 1989?
11:35:12 A. No, I do not.
11:35:16 Q. Have you ever sat on the R&D
11:35:20 strategic planning committee?
11:35:20 A. I don't have any recollection of
11:35:22 having done so.
11:35:26 Q. Have you ever heard the term, the R&D
11:35:30 strategic planning committee?
11:35:32 A. Yes, that term rings a bell.
:35:36 Q. Do you know why you would have been

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listed as having received a copy of this memo?

A. The reasonable assumption that I might draw would be that the copy holders were the directors in the R&D organization at that time, as well as the vice president.

Q. Let's go through those names. Who is J. L. Charles?

A. I believe that refers to Jim Charles.

Q. And what was his position at this time?

A. He was a director on the research side of the house. I don't recall the exact details of his title.

Q. And at this time, was Ken Houghton the vice president?

A. I believe that was his --

Q. Of research and development?

A. He was the vice president. Whether there was any additional clarifier to that title, I can't recall, that is, vice president versus senior vice president versus whatever.

Q. And who is W. F. Kuhn?

A. Bill Kuhn was also a director on the

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11:36:54 research side of the organization.

Q. And who is J. L. Myracle?

11:37:04 A. Jim Myracle was the director of the
11:37:06 organization that I believe was referred to as
11:37:14 product development.

11:37:22 Q. And at this time were you the
11:37:24 director of process development?

11:37:24 A. Yes, I was.

11:37:28 Q. If you could turn to the first page
11:37:30 of this document, I'm going to ask you if you're
11:37:32 familiar with some of the projects that are
:37:42 listed in the middle of the page. Roughly
11:37:44 halfway down that list, do you see the reference
11:37:46 to Project Tomorrow?

11:37:46 A. Yes, I do.

11:37:48 Q. Do you know what Project Tomorrow
11:37:50 was?

11:37:50 A. No, I don't have any recollection of
11:37:52 what Project Tomorrow was.

11:37:56 Q. Continuing down that list, do you
11:37:58 know what Project Sigma was?

11:38:14 A. I don't wish to answer inaccurately
11:38:18 or incorrectly, as I managed to ~~you~~ do several times
:38:20 yesterday, in making assumptions about my

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11:38:24 recollection. So I would have to say I'm unclear
11:38:28 on my recollection of what Project Sigma was.
11:38:30 Q. Do you have a general recollection of
11:38:32 what Project Sigma was?
11:38:36 A. I don't know that it's so much a
11:38:44 general recollection as it would be a guess, to
11:38:48 try and speculate as to what Project Sigma was.
11:38:52 Q. Continuing down that list, do you
11:38:58 know what the reference to Low Tar/High Flavor
11:38:58 Program is?
11:39:02 MR. MURPHY: Objection to form. You
:39:02 can answer.
11:39:10 A. A general category of activity?
11:39:10 Q. Yes.
11:39:16 A. Associated with, as the name implies,
11:39:22 low tar and high flavor.
11:39:22 Q. Did you have any involvement in the
11:39:26 Low Tar/High Flavor Project?
11:39:26 MR. MURPHY: Objection to form. You
11:39:28 can answer.
11:39:30 A. I don't recall any personal
11:39:34 involvement in that program.
11:39:40 Q. What's your general understanding of
:39:42 what that program involved?

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MR. MURPHY: Objection to form. You can answer.

A. My recollection would be that low tar/high flavor was an activity at trying to achieve subjective parity or subjective similarity with a low tar product, that parity or similarity being something at a higher tar level.

Q. Using your terminology, "subjective parity or subjective similarity," what do you understand the difference in terms of subjectives between a low tar product and what you described as, quote, something at a higher tar level?

MR. MURPHY: Objection to form. You can answer.

A. As I stated earlier, I don't consider myself a subjective expert. Based on my own personal smoking, it is my observation that lower tar products are less flavorful, and the intent of this program would be to attempt to close that gap, if you will, in less flavorability.

Q. With respect to the Low Tar/High Flavor Project, do you have any knowledge of any work to control nicotine delivery?

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MR. MURPHY: I object to the form of the question. You can answer.

A. I don't have any recollection of that work.

Q. What became of the Low Tar/High Flavor Project?

MR. MURPHY: Objection to form. Vague and ambiguous. You can answer.

A. I don't have any awareness as to what became of that work.

(Knudson Exhibit 14 for identification, the 1992 Philip Morris U.S.A. R&D product development department operational plans.)

Q. You've just been handed what's been marked as Knudson Exhibit 14, entitled "The 1992 Philip Morris U.S.A. R&D product development department operational plans." The Bates stamp range is PA 732002 to PA 732072. The corresponding Philip Morris production numbers are 2021323470 through 2021323540.

I understand that by 1992, you were no longer in the research and development group. Have you ever seen this 1992 report?

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A. I don't have any recollection of having seen it.

Q. Do you see the reference to C. Lilly on the first page? Do you know ~~what~~ who that is?

A. Yes, I would assume that would be Cliff Lilly.

Q. Do you know what his position was in 1992?

A. I believe his position title was -- now I'm going to draw a blank, and I mentioned it yesterday. Research fellow.

Q. Looking just at the first page of this exhibit, is this an annual report of the Philip Morris U.S.A. R&D and product development department?

A. I don't know.

Q. Have you ever seen reports with this title for different years?

A. I don't have a recollection of that.

Q. If you'll turn to PA 732039, roughly halfway through this document.

(Witness complies.)

Q. You'll see a description of a project entitled, "Low tar/high flavor." And I'll read

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11:45:56 the objective. "Develop new technologies which
11:46:00 will allow us within the next two to four years
11:46:06 to produce 'ultralow' tar, 2 to 4 milligram,
11:46:08 cigarettes with sensorial experience of 'lights'
11:46:10 or 'full flavored cigarettes.'"
11:46:14 When we were talking about Knudson
11:46:20 Exhibit 13 and the reference to low tar/high
11:46:26 flavor, does this objective in Knudson 14 seem
11:46:30 consistent with what you understand the Low
11:46:30 Tar/High Flavor Project to be?
11:46:32 MR. MURPHY: I object to the form of
:46:32 the question. The witness has testified that he
11:46:36 doesn't recall seeing this document before. He
11:46:38 can answer the question.
11:46:50 Q. Do you understand my question,
11:46:52 Mr. Knudson?
11:46:58 A. I believe so. Could you repeat the
11:46:58 question for me?
11:47:00 Q. I'm simply asking you, looking at
11:47:02 this description in Knudson Exhibit 14, whether
11:47:06 that's consistent with your understanding of the
11:47:08 Low Tar/High Flavor Project that I asked you
11:47:12 about that was referenced in Knudson 13.
:47:12 MR. MURPHY: I object to the form of

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the question. You can answer.

A. I guess the difficulty that I would have is since I didn't write this, since I don't have any recollection of having seen this before or having talked to anyone who did author this piece of work, I'm not sure what -- whether or not some of the terms used in here such as "The sensorial experience of lights or full flavored cigarettes" would be consistent with my own description of what my perception of the project was all about.

Q. Do you know what Project Beta was?

MR. MURPHY: Objection. I'll let the witness answer the question based on his own knowledge. I would caution counsel and the witness that based upon the judge's May 17 ruling, I'm not prepared to let the witness reveal in his answer any details with which he may or may not be familiar concerning such a project.

MR. ROGERS: I'm not sure I understand the grounds for your objection. What does the May 17th ruling have to do with my question as to the witness's understanding of

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11:48:36 Project Beta?

11:48:38 MR. MURPHY: The witness can answer
11:48:40 whether he has an understanding of Project Beta.
11:48:46 But under the Court's ruling with respect to the
11:48:50 discoverability, any research or development
11:48:52 effort -- let me stop here.
11:48:54 I think it might be helpful if the
11:48:56 witness stepped out of the room for just a moment
11:48:58 and we can put this on the record very briefly
11:49:02 and invite him back in.
11:49:02 MR. KILLORY: You might want to see
:49:06 if the witness answers just the question put.
11:49:08 MR. MURPHY: If you can answer the
11:49:12 question that's been put to you with a yes or no
11:49:14 answer, let's do it that way, and we'll see
11:49:18 whether we have an issue that needs to be
11:49:20 discussed among counsel without your presence.
11:49:24 A. Could I have the question again?
11:49:30 Q. Sure. Do you know what Project Beta
11:49:30 was?
11:49:42 A. Again, I don't think I can accurately
11:49:46 answer the question yes or no. But I think,
11:49:48 despite my counsel's warning, I can answer the
:49:52 question what is essentially a yes, to say I have

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some awareness of what Project Beta was.

Q. What's your understanding of what Project Beta was?

MR. MURPHY: All right. Let's stop here for a moment. We'll ask the witness to step out of the room. I'll explain what our position is with respect to this very briefly, and then we can invite him back in.

MR. ROGERS: We'll stay on the record during this period.

(The witness left the deposition room.)

MR. MURPHY: Alex, I'm prepared to let the witness answer the question that you've posed, which is what his understanding of the objective or general nature of Project Beta is.

However, under the Court's May 17 ruling with respect to the discoverability of work that Philip Morris may or may not be engaged in with respect to the development of nonconventional cigarettes that are not currently and have never been commercially sold in the United States, I intend to instruct the witness that he should not reveal in his answers any

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11:51:12 design details or any specific processes or
11:51:16 designs in connection with such a project with
11:51:18 which he may or may not be familiar.
11:51:20 MR. ROGERS: I appreciate that
11:51:26 clarification of your objection, and if I ask a
11:51:30 question that in your opinion requires you to
11:51:32 instruct the witness that he should not answer,
11:51:36 we'll come to that stage, and if the witness
11:51:40 accepts your instruction, then we'll move on.
11:51:40 MR. MURPHY: Fine. Let's invite the
11:51:42 witness back in.
(The witness entered the deposition
11:52:18 room.)
11:52:28 MR. MURPHY: I would request at this
11:52:32 point of the court reporter that this particular
11:52:36 section of the transcript be prepared even in the
11:52:40 initial draft form as a separate transcript
11:52:42 designated "Trade secret and highly
11:52:46 confidential."
11:52:48 Mr. Rogers has a question for the
11:52:52 witness which I will let him repeat or reframe,
11:52:54 and we'll proceed from there.
(The following portion was designated
highly confidential and trade secret and is bound

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(End of separately bound portion.)

11:56:06 Q. We're returning to Knudson Exhibit 14, page Bates stamped PA 732039, the description of the low tar/high flavor project.

11:56:20 If you'll turn to the fifth paragraph on the page, under the subheading "Explanatory introduction," I'll read that. "If we use new technology, learn from Beta and what the competition is doing, we can maximize what we do best, make cigarettes minimizing the tobacco and tar and maximizing the nicotine delivery."

11:56:46 MR. MURPHY: Why don't you read the next sentence as well.

11:56:50 Q. "We should be able to produce a product that appears to perform similarly to conventional cigarettes but with very little 'tar' (2 to 4 milligrams) and about 1 milligram of nicotine and with the sensorial satisfaction of a 12 to 14 milligram cigarette."

11:57:12 Have you ever heard that what Philip Morris does best is to make cigarettes minimizing the tobacco and tar and maximizing the nicotine delivery?

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11:57:18 MR. MURPHY: Objection to form. You
11:57:20 can answer the question.
11:57:22 A. No, I don't have any recollection of
11:57:24 hearing any statement like that.
11:57:28 Q. Do you agree with the statement that
11:57:30 what Philip Morris does best is to make
11:57:32 cigarettes minimizing the tobacco and tar and
11:57:34 maximizing the nicotine delivery?
11:57:36 MR. MURPHY: Objection to form.
11:57:40 Calls for opinion. You may answer the question.
11:57:50 A. I'm not aware of any situation in
:57:54 which we have demonstrated that as a capability
11:57:58 that I would apply that kind of language to.
11:58:08 Q. Is nicotine delivery a criteria in
11:58:10 the design of Philip Morris cigarettes?
11:58:12 MR. MURPHY: Objection to form. I
11:58:18 don't know what you mean by "a criteria in the
11:58:20 design."
11:58:22 Q. Do you understand my question,
11:58:24 Mr. Knudson, or shall I rephrase it?
11:58:26 A. If you could rephrase it, I think it
11:58:28 might help.
11:58:32 Q. In determining the ingredients of
:58:34 Philip Morris cigarettes, is there any

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consideration given to the nicotine delivery of that cigarette?

MR. MURPHY: Objection to form. You can answer.

A. It is not my area of expertise or knowledge. So I don't have any awareness of that.

(Knudson Exhibit 15 for identification, memo from W. F. Kuhn to Ms. Claire Carcich dated September 10th, 1991.)

Q. You've just been handed what's been marked Knudson Exhibit 15, which is a memo from W. F. Kuhn to Ms. Claire Carcich dated September 10th, 1991, subject, tar and nicotine contents of Philip Morris U.S.A. cigarettes.

The Bates stamps numbers are PB 205037 through PB 205041. Philip Morris numbers are 2031439278 to 2031439282. And if you'll look in the first paragraph there's a reference to you, and as well, there's a reference to you in the list of individuals in the cc category on the bottom of that first page as having received a carbon copy of this document.

First let me ask you about the

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12:00:48 numbers on the lower right hand coner. In
12:00:50 between the two numbers I just read is a number, C
12:00:56 91-04369. Do you know what that number is?
12:00:58 MR. MURPHY: Objection to form. The
12:01:00 document speaks for itself. And counsel's
12:01:02 characterization of it should be stricken.
12:01:04 Nevertheless, the witness may answer the
12:01:04 question.
12:01:12 MR. ROGERS: What was my
12:01:14 characterization of the document?
12:01:14 MR. MURPHY: You said "A reference to
:01:16 you in the list of individuals in the cc category
12:01:18 on the bottom of that first page as having
12:01:22 received a carbon copy of this document." The
12:01:26 document speaks for itself. The witness may
12:01:32 testify to what he knows or recalls. Just pose
12:01:34 your question, counsel.
12:01:40 Q. Do you recall receiving a copy of
12:01:42 this document marked Knudson Exhibit 15?
12:01:44 A. No, I don't have any recollection of
12:01:44 that.
12:01:50 Q. Do you have any reason to believe
12:01:52 with your name listed in the cc category that you
:01:54 did not receive a copy of this document?

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12:01:56 A. No, I wouldn't have any basis for assuming that I didn't receive it.

12:02:06 Q. Let's return to my question about that middle number on the lower right hand corner of the first page. Do you recognize that number?

12:02:10 A. No, I do not.

12:02:22 Q. Putting aside the specific numerals in this number, is that a form or a stamp that you've seen on other Philip Morris documents, that is, a document beginning with the letter C?

12:02:38 MR. MURPHY: Objection to form. If :02:40 you understand the question, you may answer.

12:02:46 A. I don't have any recollection of seeing that -- any kind of alpha or numeric 12:02:54 number as represented here.

12:02:58 Q. If you'll turn to the first paragraph 12:03:00 of this document -- first let me describe it. 12:03:02 The subject is tar and nicotine contents of 12:03:04 Philip Morris U.S.A. cigarettes. The first 12:03:06 paragraph reads, "In response to your request for 12:03:08 an accurate tabulation of the tar and nicotine 12:03:12 contents of our entire domestic production, I 12:03:14 forwarded your list to Dick Heretick, director of :03:18 cigarette technology, Don Knudson, director of

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quality assurance, and Charles Bates, director of technical services, for their awareness and concurrence of the data contained therein."

On or before September 10th, 1991, do you recall discussing tar and nicotine contents of Philip Morris U.S.A. cigarettes with W. F. Kuhn?

A. I don't have any clear, specific recollection of discussing tar and nicotine contents with Bill, Bill Kuhn. I have a recollection that we probably did in fact have conversations.

Q. Do you recall this project that Mr. Kuhn performed in response to Ms. Claire Carcich's request?

MR. MURPHY: Objection to the form. You can answer.

A. I'm not sure that I would perceive this document as indicating what you've referred to as a project.

Q. Let's use Mr. Kuhn's words. He refers to it as an accurate tabulation of the tar and nicotine contents of Philip Morris's domestic production. Do you recall Mr. Kuhn's work to

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prepare an accurate tabulation of the tar and nicotine contents of Philip Morris's domestic production for Ms. Claire Carcich?

MR. MURPHY: Objection to form. You can answer.

A. No. I don't have any recollection of that.

Q. If you'll turn to the second page, it's entitled "Tar and nicotine disclosure, August 1991." The left hand column is labeled "Description." It appears to be specific domestic products manufactured by Philip Morris.

The second column is "ADV tar." Do you know what "ADV tar" means?

A. I would be guessing to try and answer that question.

Q. Have you ever heard that term, "ADV tar"?

A. Not as such, no.

Q. The next column, actually it's two columns under one heading, appears to be "Tar targets." And the left side is tar, and the right side is NIC. Does the term "Tar target" mean anything to you?

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12:06:06 A. Yes, I think it's one of those areas
12:06:16 where we have tended to use the term "target" and
12:06:20 "specification" a bit interchangeably.
12:06:32 Q. So am I correct that this is the tar
12:06:34 specification for each one of these domestic
12:06:36 Philip Morris brands?
12:06:38 MR. MURPHY: Objection to form.
12:06:40 Q. At this time.
12:06:42 MR. MURPHY: You can answer.
12:06:44 A. The only thing I could tell you is
12:06:48 that at this time, at this time this document was
:06:56 generated, that this appears to represent the tar
12:07:00 targets. Whether in everyone's mind "tar target"
12:07:06 and "tar specification" were interchangeable
12:07:10 terms, and what appeared on our specification
12:07:12 documents at that point in time, I do not
12:07:14 recall.
12:07:16 Q. And the next column to the right of
12:07:22 that appears to be labeled NIC. Do you
12:07:24 understand that to refer to nicotine?
12:07:30 A. That would be the normal abbreviated
12:07:32 nomenclature to be used.
12:07:34 Q. And this column appears under a
:07:38 title, "Tar targets." Is there a nicotine target

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12:07:42 for each Philip Morris domestic brand?

12:07:42 A. Not to my knowledge.

12:07:48 Q. Do you know why this information

12:07:52 would be supplied underneath a heading labeled

12:07:54 "Tar targets"?

12:08:02 A. The FTC smoking method, which is the

12:08:10 basis for arriving at the tar determination,

12:08:16 involves a determination of both tar and

12:08:24 nicotine, and as such it has been quite normal to

12:08:26 represent both of those pieces of data

12:08:32 simultaneously, since they come and are part and

:08:34 parcel to the overall determination of tar.

12:08:52 Q. Does Philip Morris measure nicotine

12:08:56 delivery of its domestic brands?

12:08:56 MR. MURPHY: Objection to form. You

12:08:58 can answer.

12:09:04 A. In the FTC smoking method, to the

12:09:14 best of my understanding, the condensate is

12:09:18 measured and a subsequent determination of the

12:09:24 water and nicotine content within that condensate

12:09:28 are -- need to be determined in order that they

12:09:32 can be subtracted from that condensate to give

12:09:36 you the resultant figure which is the tar

:09:36 figure.

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12:09:50 Q. So that I understand your testimony, Philip Morris does in fact measure nicotine delivery of its domestic brands?

12:09:56 MR. MURPHY: I object to the form of the question. The answer speaks for itself. You can answer again.

12:10:04 A. In order to determine tar in the FTC smoking method, the water and nicotine content delivered in the smoking condensed on the Cambridge pad must be determined.

12:10:14 Q. Turning to the next two columns, which appear under the label Q.A., and then there's an asterisk, what do you understand Q.A. to mean?

12:10:32 A. Quality assurance.

12:10:34 Q. And the asterisk, I can see from this page, if you look to the bottom of the page, refers to January through August 1991.

12:10:38 A. Mm-hmm.

12:10:46 Q. Underneath Q.A. are two columns, again, one labeled "Tar," and one labeled NIC. Do you know why there's a difference, focusing on the first line, Alpine ~~FFKSMSFP~~ FFKSMFSP, why there is a difference between the tar figure under Q.A. and

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12:11:18 the tar figure under the column labeled "Tar
12:11:20 targets"?
12:11:22 A. No, I don't.
12:11:28 Q. Does that surprise you, on this page,
12:11:32 that there is a difference between the tar target
12:11:34 and the tar Q.A.?
12:11:36 MR. MURPHY: Objection. Lack of
12:11:40 foundation. You haven't asked the witness yet if
12:11:44 he understands what Q.A. measurement is being
12:11:46 taken. But he can answer the question if he
12:11:46 understands.
:11:50 MR. ROGERS: Before that, then, why
12:11:52 don't I withdraw that question and ask yours.
12:11:54 Q. Do you understand what Q.A.
12:11:56 measurement is?
12:11:58 A. I believe so.
12:12:00 Q. What is Q.A. measurement?
12:12:06 A. In the period that's referenced here,
12:12:10 from January to August of 1991, one of the
12:12:14 functionalities that existed in the central
12:12:20 quality assurance organization, which would
12:12:22 include the initial time period that I was in
12:12:32 that organization, was a smoking laboratory. So
:12:34 the reference here would simply be to identify

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12:12:40 the laboratory that was the source of this data.

12:12:46 Q. Is the same test performed to

12:12:52 determine tar targets and this Q.A. tar?

12:12:54 MR. MURPHY: Objection to form. If

12:12:56 you understand the question, you can answer.

12:13:10 A. I'm not sure from this as to whether

12:13:18 or not tar targets represent data or in fact

12:13:22 targets.

12:13:24 Q. But your understanding of the Q.A.

12:13:28 tar is that that's an actual measurement that was

12:13:32 taken sometime between January and August 1991?

:13:34 MR. MURPHY: I object to the form.

12:13:34 You can answer.

12:13:40 A. That would -- my assumption has to be

12:13:46 that that is based on data out of that Q.A.

12:13:52 smoking laboratory. I don't know the details of

12:13:56 that data in terms of how it was averaged or

12:13:56 whatever.

12:13:58 Q. And during this time, did the Q.A.

12:14:02 smoking laboratory use what you've described as

12:14:04 the FTC method to measure tar?

12:14:08 A. For domestic smoke delivery

12:14:10 determinations, that would be correct.

:14:14 Q. Let's return to my earlier question,

2058452176

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which was focusing on the first line, this Alpine brand. Does it surprise you that there is a difference between the tar target and the tar Q.A.?

MR. MURPHY: Objection to form. You can answer.

A. Assuming that the 15.0 that's stated there as a tar target is in fact the target of center line value that's expected for that product, and that the tar numbers reflected under the Q.A. column are actual numbers, what you're seeing would presumably be a reflection of normal process variation and inability to hold a product, if you will, dead on its target.

Q. Turning to the column labeled "ADV tar," do you know whether the ADV in this context refers to advertised tar levels for these listed domestic brands?

MR. MURPHY: Objection. Asked and answered. You can answer again.

A. As I stated before, to answer that question I would be guessing. Is that what you're asking me to do?

Q. No, I won't ask you to guess.

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MR. MURPHY: That's one of the only things he won't ask you to do.

Q. Philip Morris's domestic cigarette brands list an FTC tar and nicotine level on the outside of the container; is that correct?

MR. MURPHY: Objection to form. You can answer the question.

A. In all truthfulness, I'm not sure where those numbers are printed or published.

Q. I'm talking about on the outside of a pack of cigarettes, do you know whether there's a tar and/or nicotine level on that package?

MR. MURPHY: Objection. On all domestic cigarettes? Some domestic cigarettes? What's the question?

Q. Let's take Malboro, domestic brand Malboro. Do you know whether on the package, that is to say, the box or the soft pack of a Malboro sold in the United States, whether there is a tar and/or nicotine level on that package?

MR. MURPHY: Objection to form. You can answer the question.

A. I do not recall whether or not those numbers are printed or published on that

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packaging.

Q. Based upon your experience in quality assurance, has there ever been an instance in which the quality assurance measurement of nicotine exceeded the target level for nicotine?

MR. MURPHY: Objection to form. You can answer. Misstates prior testimony as well.

A. I don't have any recollection as to the frequency in which I even saw that data, much less the variability that might exist in that data.

Q. Have you ever heard the phrase "advertised tar" in your work at Philip Morris?

A. Yes, I believe I have.

Q. What do you understand the phrase "advertised tar" to mean?

A. I believe that is the FTC tar number which is used in or is published in different forms, be it magazine or newspaper advertising, billboard advertising, or in any case where it might appear anywhere else. I'm not familiar with all the places that it might or might not be utilized.

Q. Is the FTC -- strike that. Is the

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advertised tar level a figure that Philip Morris supplies to the FTC or that the FTC determines on its own?

MR. MURPHY: Objection to form. If you understand the question, you can answer.

A. I don't believe that I'm familiar enough with that process and the interaction that exists between Philip Morris and the FTC to be able to answer that question.

Q. We talked a moment ago about a low tar/high flavor project. During the course of your tenure in the R&D department, 1982 to 1989, roughly speaking, are you familiar with any research into a low tar/high nicotine cigarette?

A. I don't have any recollection of that.

Q. Have you ever heard the term "low tar/high nicotine cigarette"?

A. I don't recall.

Q. Do you know who L. F. Meyer is, M-e-y-e-r?

A. I believe that would be Leo Meyer.

Q. And during your time in the research and development department, do you know what

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12:21:56 Mr. Meyer's position was?

12:22:00 MR. MURPHY: Objection to form. You

12:22:00 can answer.

12:22:06 A. I believe that Leo was the director

12:22:12 of product development.

12:22:18 Q. Do you know roughly what years

12:22:22 Mr. Meyer served as the director of product

12:22:24 development?

12:22:28 A. I can only say that to the best of my

12:22:30 recollection, he was the director of product

12:22:36 development when I came into R&D in 1982, and

:22:44 that at some point in time prior to my departure

12:22:50 from R&D in 1989, and I can't recall when, but I

12:22:54 believe it was after my movement to the position

12:22:56 of director of process development, which would

12:23:00 have put it at least into the 1985 framework.

12:23:02 At some point subsequent to that, he

12:23:04 passed away.

(Knudson Exhibit 16 for identification, memo from L. F. Meyer to Mr. R. P. Heretick and Mr. H. L. Spielberg dated February 28th, 1986.)

12:23:58 Q. You've just been handed what's been

:24:02 marked Knudson Exhibit 16, a one page document,

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PB 110538, Philip Morris production number 2031436681. It is a memo from L. F. Meyer to Mr. R. P. Heretick and Mr. H. L. Spielberg dated February 28th, 1986, subject matter, low tar/high nicotine cigarettes.

Looking at this document, does that refresh your recollection about research into developing a low tar/high nicotine cigarette?

MR. MURPHY: I object to the form of the question and its presumption that the witness may have any knowledge of ~~that~~ this which he may or may not recall. He may answer the question.

A. This document does nothing to refresh my memory.

Q. Have you ever seen this document before?

A. Not to my recollection.

Q. The final sentence in the first paragraph, "In addition to those prototypes I would like to have some Merit ultralights hand injected with nicotine citrate, tartrate, or sulfate to bring nicotine delivery up to 1 milligram."

Are you familiar with any research to

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12:25:18 hand inject Philip Morris cigarettes with
12:25:22 nicotine citrate, tartrate, or sulfate?
12:25:26 A. No, I don't have any awareness of
12:25:26 that.
12:25:28 MR. ROGERS: We've come to the end of
12:25:30 the tape. Why don't we break for lunch.
12:25:30 THE VIDEO OPERATOR: We're going off
12:25:32 the record. This ends videotape number 4. The
12:25:38 time on the screen is 12:25:36. We're off the
12:28:12 record.

(Luncheon recess: 12:25 p.m.)

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